

CLAIMS

1. A polynucleotide comprising a nucleotide sequence of
a promoter region of a gene encoding α subunit Gm1 of trimeric
5 G-protein.

2. The polynucleotide according to claim 1, wherein the
nucleotide sequence of a promoter region is any of the following
nucleotide sequences (1) to (4):

- 10 (1) the nucleotide sequence of SEQ ID NO: 1,
(2) the nucleotide sequence of the nucleotide numbers 603
to 3871 in the nucleotide sequence of SEQ ID NO: 1,
(3) a nucleotide sequence of (1) or (2) with deletion,
substitution or addition of one or more nucleotides, said
15 nucleotide sequence having an ability of controlling the
transcription of a gene encoding α subunit Gm1 of trimeric
G-protein, and
(4) a nucleotide sequence having an ability of
controlling the transcription of a gene encoding α subunit Gm1
20 of trimeric G-protein, and being complementary to a nucleotide
sequence of a polynucleotide, wherein said polynucleotide
hybridizes under a stringent condition to a polynucleotide
comprising the nucleotide sequence of (1) or (2).

25 3. A plasmid comprising the polynucleotide of claim 1

or 2.

4. A plasmid comprising the polynucleotide of claim 1
or 2, wherein at the downstream (3' side) of said polynucleotide,
5 said plasmid contains a polynucleotide of which transcription
is controlled by said polynucleotide.

5. A plasmid comprising the polynucleotide of claim 1
or 2, wherein at the downstream (3' side) of said polynucleotide,
10 said plasmid contains a reporter gene of which transcription
is controlled by said polynucleotide.

6. A transformed cell in which the polynucleotide of
claim 1 or 2 is introduced.

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7. A transformed cell in which the plasmid of claim 3
or 4 is introduced.

8. A transformed cell in which the plasmid of claim 5
20 is introduced.

9. A method for searching a signal transduction
controlling substance through a promoter of a gene encoding α
subunit Gm1 of trimeric G-protein, comprising

25 (1) a first step of contacting the transformed cell of

claim 8 with a test substance,

(2) a second step of monitoring the expression amount of a reporter gene or an index value correlated therewith, after the first step,

5 (3) a third step of evaluating an ability of the above-mentioned substance to control signal transduction through a promoter of a gene encoding α subunit Gm1 of trimeric G-protein, based on a change in the expression amount or index value correlated therewith monitored in the second step, and

10 (4) a fourth step of selecting a substance having an ability to control signal transduction through a promoter of a gene encoding α subunit Gm1 of trimeric G-protein, based on the signal transduction controlling ability evaluated in the third step.

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10. A method for evaluating an ability of a substance to control signal transduction through a promoter of a gene encoding α subunit Gm1 of trimeric G-protein, comprising

20 (1) a first step of contacting the transformed cell of claim 8 with a test substance,

(2) a second step of monitoring the expression amount of a reporter gene or an index value correlated therewith, after the first step, and

25 (3) a third step of evaluating an ability of the above-mentioned substance to control signal transduction

through a promoter of a gene encoding α subunit Gm1 of trimeric G-protein, based on a change in the expression amount or index value correlated therewith monitored in the second step.

5 11. A method for searching a substance which binds to the polynucleotide of claim 1, comprising

 (1) a first step of contacting the polynucleotide of claim 1 with a test substance,

 (2) a second step of checking the presence or absence of
10 formation of a complex of the polynucleotide with the test substance, after the first step, and

 (3) a third step of selecting a substance which binds to the polynucleotide, based on the analysis result, obtained in the second step, of the presence or absence of formation of a
15 complex.

 12. A method for purifying a substance which binds to the polynucleotide of claim 1, comprising

 (1) a first step of contacting the polynucleotide of claim
20 1 with a sample to form a complex of the polynucleotide with a substance, wherein said substance is contained in the sample and binds to the polynucleotide, and

 (2) a second step of isolating the substance which binds to the polynucleotide, from a formed complex, after the first
25 step.

13. A kit for screening a signal transduction
controlling substance through a promoter of a gene encoding α
subunit Gm1 of trimeric G-protein, comprising the transformed
5 cell of claim 8 and a reagent for measuring the expression amount
of a reporter gene or an index value correlated therewith.

14. A medicine for neurological disorder and/or
psychiatric diseases comprising as an active ingredient a
10 compound having an ability to control signal transduction
through a promoter of a gene encoding α subunit Gm1 of trimeric
G-protein, obtained by the searching method of claim 9 or 11,
or a pharmaceutically acceptable salt thereof, wherein the
active ingredient is formulated in a pharmaceutically
15 acceptable carrier.